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Empowering school-based leadership for sustainable and inclusive education through agroecological integration in Kiambu County, Kenya

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Abstract

Abstract Education for Sustainable Development (ESD) has become a global priority in addressing environmental degradation, food insecurity, climate change, and social exclusion. Within Kenya's Competency-Based Curriculum (CBC), schools are increasingly expected to provide practical, learner-centred approaches that enhance sustainability and inclusion. This study examined the role of school-based leadership in fostering sustainable and inclusive education through agroecological integration at Ruiru Township Secondary School in Kiambu County, Kenya. Guided by Education for Sustainable Development principles and participatory leadership theory, the study adopted a qualitative case study design. Data were collected through semi-structured interviews, focus group discussions, and participatory observations involving learners, teachers, school leaders, and community stakeholders. The findings revealed that visionary and participatory school leadership was instrumental in promoting agroecological practices through resource mobilisation, curriculum integration, stakeholder engagement, and collaborative decision-making. Learners actively participated in vertical gardening, composting, organic farming, and orchard maintenance, leading to enhanced environmental awareness, practical agricultural skills, food security knowledge, and climate resilience. The initiatives also promoted inclusion by providing diverse opportunities for participation among learners with varying interests, abilities, and backgrounds. Despite challenges related to resource limitations and inadequate technical expertise, strong leadership and community partnerships

enabled successful implementation. The study concludes that agroecological integration represents a practical and transformative approach to achieving sustainability and inclusion in education. It recommends strengthening leadership capacity, institutionalising agroecology within the curriculum, enhancing teacher training, and developing supportive policy frameworks to promote sustainable educational transformation in Kenya.

Key terms: Educational leadership, agroecology, sustainability, inclusion, Education for Sustainable Development, Kenya

1.0 INTRODUCTION

1.1 Background of the Study

Education systems worldwide are increasingly expected to contribute to sustainable development by equipping learners with the knowledge, competencies, values, and attitudes necessary to address contemporary environmental, social, and economic challenges. Education for Sustainable Development (ESD) has emerged as a key strategy for empowering learners to become responsible citizens capable of promoting environmental stewardship, social justice, and economic sustainability (UNESCO, 2020).

The United Nations Sustainable Development Goal 4 (SDG 4) specifically advocates for inclusive and equitable quality education while promoting lifelong learning opportunities for all. Increasingly, educational institutions are being called upon to integrate sustainability principles into teaching and learning processes through innovative and practical approaches. One such approach is agroecology, which combines ecological principles with sustainable agricultural practices to promote food security, environmental sustainability, and community resilience.

At the continental level, the African Union's Agenda 2063 and the Continental Education Strategy for Africa (CESA 2016-2025) emphasize transformative education that promotes sustainable development, innovation, environmental stewardship, and practical skills acquisition (African Union, 2015; African Union, 2016). These frameworks recognize the importance of integrating community-based approaches and experiential learning to address Africa's emerging environmental and socio-economic challenges.

In Kenya, educational reforms guided by Vision 2030 and the Competency-Based Curriculum (CBC) have emphasized learner-centred pedagogy, practical skill development, innovation, and sustainability (Njeng'ere, 2020). The government's Green Economy Strategy and Implementation Plan (GESIP) further advocates for environmental education and sustainable practices within educational institutions.

Kiambu County faces unique challenges associated with rapid urbanization, declining agricultural land, food insecurity, and environmental degradation. Integrating agroecological practices within schools provides an opportunity to address these challenges while simultaneously enhancing educational quality, learner engagement, and sustainable development. School-based leadership therefore becomes critical in facilitating the successful implementation and sustainability of agroecological initiatives.

1.2 Statement of the Problem

Despite policy emphasis on sustainability and practical learning, many secondary schools continue to struggle with food insecurity, environmental degradation, limited learner engagement, and inadequate practical skills development. Traditional teaching approaches often emphasize theoretical knowledge while providing limited opportunities for experiential learning and meaningful participation in sustainability initiatives.

Although agroecology offers significant potential for promoting sustainability, food security, environmental stewardship, and learner engagement, its implementation within Kenyan secondary schools remains limited. Furthermore, there is inadequate empirical evidence on how school-based leadership can support the successful integration of agroecological practices within educational institutions. This study therefore sought to examine the role of school-based leadership in promoting sustainable and inclusive education through agroecological integration at Ruiru Township Secondary School.

1.3 Objectives of the Study

General Objective

To examine the role of school-based leadership in fostering sustainable and inclusive education through agroecological integration at Ruiru Township Secondary School.

Specific Objectives

The study sought to:

1. Assess the role of school leadership in promoting agroecological practices.
2. Determine the importance of learner participation in implementing and sustaining agroecological initiatives.
3. Evaluate the contribution of school leadership in integrating agroecological education within school programmes.

1.4 Research Questions

The study was guided by the following questions:

1. How does school leadership promote agroecological practices to enhance sustainability and inclusion?
2. What role do learners play in implementing and sustaining agroecological initiatives?
3. How does school leadership facilitate the integration of agroecology into educational programmes?

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

This study was anchored on Education for Sustainable Development (ESD) and Participatory Leadership Theory.

2.1.1 Education for Sustainable Development

Education for Sustainable Development seeks to empower learners with the knowledge, skills, values, and behaviours necessary to contribute to a sustainable future (UNESCO, 2021). It promotes critical thinking, problem-solving, collaboration, environmental consciousness, and active citizenship. ESD encourages the integration of environmental, social, and economic dimensions of sustainability into educational practice.

2.1.2 Participatory Leadership Theory

Participatory Leadership Theory emphasizes shared decision-making, stakeholder involvement,

collaboration, and collective responsibility. Educational leaders who adopt participatory approaches create environments where teachers, learners, and community members contribute meaningfully to institutional development. Such leadership is particularly relevant for sustainability initiatives that require broad stakeholder engagement and ownership.

2.2 Empirical Review

Existing literature demonstrates that ESD plays a significant role in addressing global sustainability challenges. Hasanova and Safarli (2024) argue that ESD equips learners with critical thinking and problem-solving skills necessary for addressing environmental and social issues. Similarly, Ikouta Mazza (2023) notes that ESD contributes substantially towards achieving Sustainable Development Goal 4.

Research also highlights the central role of school leadership in driving educational transformation. Mogaji and Newton (2020) emphasize that effective leaders influence organizational culture, resource mobilization, stakeholder engagement, and implementation of sustainability initiatives. Lubguban and Bauyot (2025) further observe that sustainable educational leadership promotes long-term social, environmental, and economic outcomes through collaborative partnerships.

Agroecology has emerged as an effective approach for integrating sustainability within educational settings. School gardens, composting systems, and organic farming programmes provide experiential learning opportunities while promoting environmental stewardship, food security, and climate resilience. However, empirical studies focusing specifically on leadership-driven agroecological integration in Kenyan secondary schools remain limited, creating the need for this study.

3.0 METHODOLOGY

The study adopted a qualitative case study design to explore the role of school-based leadership in promoting agroecological integration. The study was conducted at Ruiru Township Secondary School in Kiambu County.

Participants comprised learners, teachers, school administrators, and selected community stakeholders involved in agroecological activities. Purposive sampling was used to select teachers and administrators directly involved in project implementation, while learners participated through focus group discussions.

Data were collected using:

- Semi-structured interviews;
- Focus group discussions;
- Participatory observations; and
- Field notes.

The collected data were analysed thematically through coding, categorization, and interpretation of emerging themes. Ethical considerations included obtaining informed consent, ensuring confidentiality, protecting participant anonymity, and securing approval from relevant educational authorities.

4.0 FINDINGS AND DISCUSSION

4.1 School Leadership and Promotion of Agroecological Practices

The findings revealed that school leadership played a critical role in initiating, coordinating, and sustaining agroecological activities. School administrators mobilized resources, allocated land for gardening projects, integrated sustainability themes into school programmes, and facilitated partnerships with community stakeholders.

Leadership commitment created an enabling environment that encouraged learner participation and fostered a culture of environmental responsibility. Participants consistently identified strong leadership support as a key determinant of project success.

4.2 Learner Participation in Agroecological Initiatives

Learners actively participated in vertical gardening, compost production, organic farming, and orchard management activities. Through these activities, learners acquired practical agricultural skills, environmental awareness, teamwork competencies, and problem-solving abilities.

Students reported increased understanding of food production systems, waste management practices, climate resilience, and sustainable living principles. The experiential nature of agroecological activities enhanced learner engagement and supported holistic development.

4.3 Agroecology as a Tool for Inclusion and Sustainability

The study established that agroecological activities provided multiple pathways for learner participation regardless of academic ability or background. Practical activities accommodated diverse interests and learning preferences, thereby promoting educational inclusion.

The initiatives also contributed to sustainability outcomes through improved environmental awareness, organic waste management, food production, and climate adaptation practices. Learners transferred acquired knowledge and skills to their households and communities, extending the impact beyond the school environment.

4.4 Discussion of Findings

The findings align with UNESCO's ESD framework, which emphasises experiential learning, community engagement, and sustainability-oriented competencies. The results further support Mogaji and Newton's (2020) argument that effective leadership serves as a catalyst for educational transformation.

Participatory leadership practices enabled collaborative implementation of agroecological initiatives and strengthened stakeholder ownership. The study therefore confirms that sustainability initiatives are more likely to succeed when supported by visionary leadership, active learner involvement, and strong community partnerships.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study examined the role of school-based leadership in promoting sustainable and inclusive education through agroecological integration at Ruiru Township Secondary School. The findings demonstrate that effective leadership is fundamental in fostering sustainability-oriented educational transformation.

Agroecological initiatives enhanced learner participation, environmental stewardship, food security awareness, practical skills development, and climate resilience. The activities also promoted educational inclusion by providing diverse opportunities for engagement and experiential learning.

The study concludes that agroecological integration represents a viable pathway for achieving the objectives of Education for Sustainable Development within Kenyan schools and underscores the importance of leadership in driving institutional change.

5.2 Recommendations

School Leadership Development

School leaders should receive continuous professional development on sustainability leadership, agroecology, and Education for Sustainable Development.

Curriculum Integration

The Ministry of Education should formally integrate agroecology as a cross-cutting theme within the Competency-Based Curriculum to strengthen sustainability education.

Learner Empowerment

Schools should strengthen learner participation through environmental clubs, student-led projects, and peer leadership initiatives related to agroecology.

Resource Mobilization

Government agencies, development partners, and community stakeholders should provide financial, technical, and infrastructural support to facilitate agroecological initiatives.

Teacher Capacity Building

Teachers should be trained in agroecological practices and experiential learning methodologies to support effective implementation.

Policy Support

National and county governments should develop supportive policies and implementation frameworks that promote agroecological education within schools.

5.3 Areas for Further Research

Future studies should:

1. Examine agroecological integration across multiple schools and counties.
2. Investigate long-term impacts of agroecological education on learner outcomes.
3. Evaluate policy and institutional factors influencing sustainability initiatives in schools.

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